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Idaho Barley REPORT

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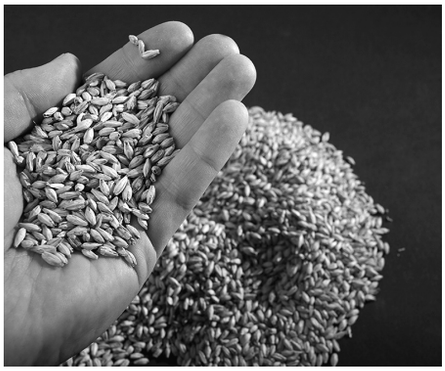
2014 proves very challenging for Idaho barley crop



There is no way to sugarcoat the serious quality and economic losses suffered in the 2014 Idaho barley crop. About 92 percent of the state's barley crop is grown in southern and eastern Idaho – the region of the state that received excessive moisture throughout the month of August. The 2014 harvest proved to be the wettest in southern Idaho since 1953. Our producers and malting industry partners were severely tested by these highly unusual wet harvest conditions and more than rose to the challenge. But despite best efforts to get the damaged crop harvested in a timely manner and stored properly, we anticipate that as much as 60% of the state's malting barley crop suffered too severe of sprout damage to make malt and will be downgraded to feed quality and sold at less than half of the original contract value.

For the past 45 years Idaho has been known as a reliable supplier of high quality malting barley. The 2014 harvest has proven to be a humbling and economically devastating experience for everyone involved in this great business.

Lessons learned – When rain occurs just before harvest, the grain starts germinating, resulting in kernels that are more susceptible to damage during harvest. Dr. Juliet Marshall, UI cereal pathologist/agronomist, collected barley samples from throughout the region that were damaged and showing mold growth. Samples were sent for testing of damaging mycotoxins that would have rendered grain unfit for feed. No mycotoxins were found in the grain. In addition, test weight is reduced with each rain as the density of the grain changes. The accuracy of on-combine moisture sensors can decrease, resulting in harvesting grain at higher moisture levels. The germ can easily be separated from the seed, resulting in non-viable barley.

We learned several important lessons from this year's experience. We consulted the experts in the field to help us identify keys to maintaining viability in sprout damaged malting barley.

- Producers must be diligent about harvesting when their crop is ready, which may require harvesting on Sundays and during fairs and other important local events.
- Adjust the combine to minimize germ damage and broken and skinned kernels.
- Proper storage with good aeration is a must. Grain stores best if it is cool, dry and clean. For rain damaged barley with moisture above 13%, it is critically important to dry the barley as quickly as possible using aeration. Use fans to cool and change the air in the bin. Low moisture grain has a much better chance of staying viable than higher moisture grain (over 13%). Sprouted kernels need air exchange to stay viable.
- Monitor your grain frequently in storage. Level the grain peaks in the bins. Heat and moisture will migrate to the highest point in the bin, causing barley to lose germination vigor. Check for moisture and heat and look for insect activity in the uppermost center of the bin.
- Producers can monitor for germination: Mix 9 parts of water with 1 part of hydrogen peroxide in a glass, then put 100 kernels of barley in the glass. At the end of two days drain and count the kernels that have developed roots.

IBC implements crisis action plan – When damage became apparent in early August, the Idaho Barley Commission immediately began implementing a **Barley Crop Crisis Action Plan**. Here are some of the steps we have taken to help mitigate economic losses in the 2014 crop:

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FARM BILL / CROP INSURANCE WORKSHOPS ARE COMING

Sponsored by the University of Idaho Extension, USDA Farm Service Agency, USDA Risk Management Agency, Idaho Barley Commission, University of Idaho Southern Idaho Cereals Extension Team, Anheuser Busch, MillerCoors, Great Western Malting Co., Grain Craft, Thresher Artisan Wheat, Lansing Trade Group, Mountain States Insurance and Hub International Insurance Brokers

SOUTHERN/EASTERN IDAHO
8:30 a.m. to 3:00 p.m.

Dec. 1 St. Anthony – Extension Office
Dec. 2 Idaho Falls – Shilo Inn
Dec. 3 Pocatello – Red Lion Hotel
Dec. 4 Burley – Burley Inn
Dec. 5 Twin Falls – Red Lion Canyon Springs

NORTH IDAHO
8:30 a.m. to noon

Jan. 12 Craigmont – Community Center
Jan. 13 Lewiston – LCSC Williams Conference Center
Jan. 14 Plummer – Benewah Medical Center
Jan. 15 – Bonners Ferry – Extension Office

AGENDA:

- Lessons learned from 2014 sprout damage & why it matters to maltsters and millers. *Maltster (invited) and Reuben McLean, Grain Craft* **(southern / eastern ID locations only)**
- Crop Insurance – review of barley and wheat policy coverage. *Ben Thiel, RMA Spokane Regional Office Director*
- Farm Bill – overview of key provisions & on-line decision tools to compare PLC and ARC. *Ben Eborn, University of Idaho Extension and Jeremy Nalder, FSA State Office*
- Supplemental Coverage Option (SCO) – how it works for 2015 barley and spring wheat. *Ben Thiel, RMA Spokane Regional Office Director*

2014 PROVES VERY CHALLENGING FOR IDAHO BARLEY CROP

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- **We are assisting Idaho barley producers** with questions on feed market channels and crop insurance. Assisting producers has been our top priority. On August 19 we prepared and distributed a "**Guide to Idaho malting barley producers on how to handle malting barley injured by sprout"** and included a Midwest publication on **"Harvesting & Storing Malting Barley."**
- We prepared and distributed a press release on August 18 and have conducted numerous one-on-one interviews with print and electronic media throughout the affected region.
- We have conducted **extensive outreach with all malting barley customers** to determine the extent of losses and ways to help mitigate the loss of malting barley from the 2014 harvest.
- We have **coordinated closely with USDA Farm Service Agency and locally affected counties on appropriate disaster declarations**, which might make additional USDA assistance available to producers in these and contiguous counties in the future. We sent a joint IBC/IGPA letter to 11 affected counties on August 26. All of these counties have completed disaster declarations.
- We have **communicated closely with the USDA Risk Management Agency (RMA)**, crop insurance companies and growers to clearly understand what quality losses will be covered under various insurance policies and clear up confusion and misinformation. We held a **conference call with RMA Spokane and Kansas City on September 16 on several key issues related to 2014 coverage and loss adjustments.**
- We are **participating in an Idaho Grain Crop Crisis Response group convened by Idaho House Speaker Scott Bedke** and attended meetings on September 25 and October 16. We have provided information on crop losses and crop insurance coverage gaps to state and congressional leaders.
- We are **conducting extensive outreach to local and Western U.S. cattle and dairy feeders and potential export customers** to identify appropriate market options for unexpectedly large volumes of feed barley.
- We are **engaging with the barley research community** on appropriate research and management strategies to minimize these kinds of pre-harvest sprout losses in the future.

Other 2014 Pest, Disease and Fertility Issues

We convened a meeting of the University of Idaho cereals experts at the Aberdeen Research & Extension Center in early October to discuss other 2014 crop issues and identify grower management and research priorities. This team is comprised of Dr. Juliet Marshall, cereal pathologist/agronomist; Dr. Christopher Rogers, barley agronomist; and Dr. Arash Rashed, entomologist.

2014 PEST AND DISEASE ISSUES – **Pest problems in eastern Idaho dryland areas** – Dr. Arash Rashed reported heavy infestation of mealybugs, and presence of wireworms, thrips and likely early season damage from brown mites in certain dryland production areas, like Soda Springs. These pests are prevalent in this region and levels were exacerbated by drought conditions in June and July. Some unusual findings – wireworm feeding usually winds down towards the end of summer and during fall, however, that did not appear to be the case this year.

If we have a mild 2015 winter (over winter / lay eggs), pest populations such as mealybugs, aphids and mites will likely remain high next year. Arash tested plants for various aphid- and mite-transmitted viruses but found none.

- **Grower management** – Need to control volunteer grains and implement rotation out of continuous grass cropping system.

Dr. Christopher Rogers, UI barley agronomist

Dr. Arash Rashed, UI entomologist

- **Research needs** – Continued evaluation of different chemical controls, evaluating the biology of mealybugs. **NEW** – Investigate use of winter cover crops; crop rotation out of cereals / cropping systems approach to pest control. ***(Christopher Rogers, Xi Liang, Arash Rashed).***

Wireworms – wireworm populations appear to be on the rise, resulting in yield losses. Arash was funded by the IBC to implement a trapping program this summer to establish a baseline of pest distribution. Arash is now part of a regional network of scientists working on wireworm control.

- **NEW research needs** – Investigate affects of no-till on wireworm populations (potential strip trials in Picabo in 2015).

Aphid activity in winter barley region of south-central Idaho – Although there is not a systematic aphid trapping program in place due to a lack of funding, Arash confirms that Bird Cherry Oat aphid activity was present this fall. Plants infested with mealybugs (sampled to establish mealybug colony) developed large numbers of aphids in containment, indicating the presence of aphids. Bird Cherry Oat aphid is an efficient vector of **Barley Yellow Dwarf Virus.**

- **Grower management** – Growers should implement aggressive field scouting now and again in early spring (spring grains) to determine need for insecticide control.

Disease problems – Dr. Juliet Marshall reported heavy levels of Barley Scald and Spot Form of Net Blotch (SFNB) in irrigated fields. 2013 was first year SFNB was confirmed in Idaho and it is NOT GOOD NEWS. This year, SFNB was found throughout the barley growing region. From Midwestern experience, yield losses from SFNB can be substantial. Juliet found no confirmed DON from Fusarium Head Blight in barley

Dr. Juliet Marshall, UI cereal pathologist/agronomist

this year, but high disease and DON levels have been confirmed in wheat.

- **Grower management** – Dr. Marshall is **recommending a tank mix of herbicide and fungicide to protect against the SFNB disease threat**. Control volunteer grains and implement rotation out of continuous grass cropping system. Do not plant barley after corn to reduce risk of FHB and DON toxins.

Fertility management and performance – Dr. Christopher Rogers has consulted growers in different production regions about fertilizer performance. Concern has been raised about the performance of urea fertilizer as compared to other nitrogen sources. With proper management, differences are not expected between fertilizer nitrogen sources. Soil testing should be conducted for the 0-12 and 12-24 inch depth to determine fertilization rates; however, continued research is needed to improve recommendations for current varieties and to investigate current and new soil test methods with the potential to provide more accurate recommendations.

- **Grower education** – Urea should be applied onto a dry soil surface, and incorporated (i.e., via tillage, rainfall, or irrigation) within two days of application. Increased soil moisture and humidity in the region, due to heavy fall rains, can potentially increase fertilizer nitrogen loss and thus, proper management is of increased concern.
- **Research** — Research is underway investigating improved fertilizer management under varied conditions. Christopher and Arash are currently studying effects of nitrogen on aphid and barley yellow dwarf prevalence in barley.
  NEW — Evaluate current and new soil testing methods to improve estimates of available nitrogen and thus, improve the accuracy of soil test recommendation for current varieties. Evaluate fertilizer nitrogen utilization by various barley varieties in efforts to improve fertilizer use efficiency. Christopher has initiated research to investigate optimal rates and timing of nitrogen application for winter malt varieties. Further investigations are needed, particularly in dryland areas, to investigate the agronomic and economic appropriateness of fertilizer management strategies, including enhanced efficiency fertilizers, particularly for surface/top dress applications. Ultimately his job will be to research up-to-date nutrient management strategies that will help our growers maximize agronomic and economic returns while minimizing environmental impacts. **His program will encourage the adoption of the 4R approach to nutrient stewardship: the right fertilizer source, at the right rate, at the right time, and in the right place.**

2015 MALT BARLEY CONTRACTING UNDERWAY

The major malting companies who have purchased barley from Idaho growers for the past 45 years are now offering competitive 2015 contracts. We are very much aware of the challenges all of these companies faced with the high level of sprout damage in the 2014 Southern Idaho crop and the resulting shortage of barley to meet their beer manufacturing needs. These companies stepped up to the plate, working diligently to take as much of the damaged Idaho crop as feasible. We want to thank our loyal Idaho barley customers for their business and their long-term commitment to Idaho barley producers. These companies supply malt for some of the most popular beers in America.

BEER INDUSTRY OVERVIEW

Looking back at 2013, total retail sales grew one percent to reach $105.1 billion dollars, despite experiencing a 1.2 percent decrease in volumes. This is a direct result of trading up by consumers, as 25 percent of industry volumes and 35 percent industry dollars are now attributed to the high-end beer segments. This shift in the marketplace has led to increased innovation for the industry, especially the large brewers, with brands like Miller Fortune and the Bud Light Ritas. Anheuser-Busch and MillerCoors combine for 10 of the top 15 new beer brands in supermarkets this year.

Once again, beer sales far outpaced our competitors in terms of dollar and volumes sales in 2013 within the alcohol beverage sector. This year, beer volume sales in the convenience

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BEER INDUSTRY OVERVIEW

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channel are in the black and the off-premise business has picked up in October.

There is positive economic news that could lead to improved trends in the beer market. Consumer confidence appears to be rebounding after experiencing a jump during the beginning of 2014 that has been maintained, coupled with a drop in gas prices and lower unemployment rates. As consumers continue to develop a more positive outlook on the economy, it is likely to lead to increased spending.

As of June 30, 2014, 3,040 breweries were operating in the U.S., according to the Brewers Association. Additionally, there were 1,929 breweries in planning. U.S. beer sales are estimated down slightly from a year ago, while craft beer sales are up 18 percent and are expected to reach 10-11 percent of the U.S. beer market this year.

While still only a sliver of the overall beer market, craft beer is estimated to use more than 25 percent of U.S. malt. However, the country's largest brewers continue to be the primary customers for Idaho barley and malt through long-standing, sustained partnerships with growers in the state and region. Now, more than ever, brewers and barley producers are reliant upon each other to produce the best barley that goes into making high quality beer – whether that beer is a premium light or a high-end brand. Many brewers have devoted resources this year to promoting the quality of their beers, with an emphasis on the importance of barley to their brewing process.

IDAHO BARLEY COMMISSION

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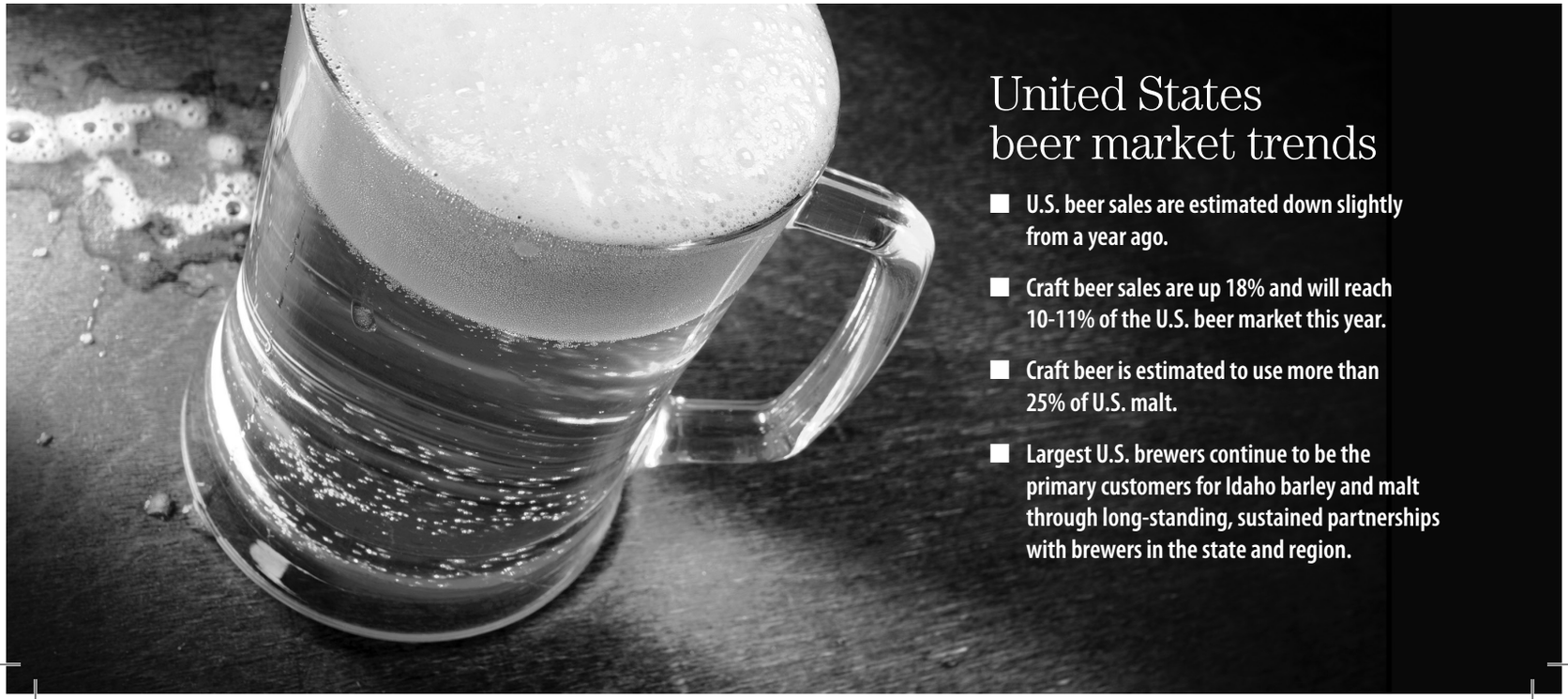

United States beer market trends

- **U.S. beer sales are estimated down slightly from a year ago.**
- **Craft beer sales are up 18% and will reach 10-11% of the U.S. beer market this year.**
- **Craft beer is estimated to use more than 25% of U.S. malt.**
- **Largest U.S. brewers continue to be the primary customers for Idaho barley and malt through long-standing, sustained partnerships with brewers in the state and region.**